

## **TOOL ORGANIZER**

### **FIELD OF THE INVENTION**

The present invention relates generally to a tool organizer,  
5 and more particularly to a structure to organize wrenches of  
various specifications.

### **BACKGROUND OF THE INVENTION**

There are a number of hand tools of various specifications,  
10 which are generally denoted in the metric system or British  
system. For this reason, the hand tools must be arranged in an  
orderly manner so as to gain simplicity and efficiency. For  
example, a socket wrench set comprises a number of sockets  
various in specification, as illustrated in FIG. 1. Each socket 1  
15 has a coupling end 2 and a working end 3. THE coupling end 2  
has a tetragonal slot, while the working end 3 has a hexagonal  
slot. The coupling ends 2 of the sockets are of various  
specifications, such as 1/4", 3/8", 1/2", 3/4", and 1". The  
working ends 3 of the sockets are of various specifications, such  
20 as 15mm, 16mm, 17mm, 18mm, 19mm, 20mm, and 21mm. The  
specifications may be denoted in either the metric system or  
British system. It is therefore imperative that the sockets of a  
socket wrench set must be arranged in an orderly way to enable  
a user of the socket wrench set to enhance his or her work  
25 efficiency.

As shown in FIG. 2, a socket organizer 4 of the prior art comprises a base 5 and a plurality of elastic retainers 7, each having a head 9 of a specification in conformity with the specification of the coupling end 2 of the socket 1. The base 5 is provided with two sliding projections 6 opposite to each other and extending along the longitudinal direction of the base 5. The elastic retainers 7 have two sliding grooves 8, which are slidably fitted with the sliding projections 6 of the base 5. In light of the coupling ends 2 of the sockets being of a tetragonal construction, they can be retained by any one of the elastic retainers 7, thereby resulting in a chaotic condition of the sockets 1, as illustrated in FIG. 3. Under such circumstances, one must take the trouble to look for a socket with the working end 3 of a desired specification.

As shown in FIG. 4, another socket organizer 10 of the prior art comprises a plurality of retaining members 11, each having a retaining portion 12 which is provided with a retractable ball 13. The retaining portion 12 is of a tetragonal construction and is fitted into the coupling end 2 of the sockets 1. It is conceivable that the sockets 1 are apt to be arranged in a disordered condition in terms of the specifications of the working ends of the sockets.

As shown in FIG. 5, a prior art socket organizer 14 has a main body 15 which is provided with a plurality of locating slots 16, each being provided at a bottom end with a magnetic piece

17. The locating slots 16 are various in dimension according to the outer diameter of the sockets 1. The sockets with a relatively small outer diameter can be located in those slots 16 which are intended to locate the sockets with a greater outer diameter, as  
5 illustrated in FIG. 6. As a result, a user of the sockets must take the trouble to look for a socket with the working end of a desired specification.

As shown in FIG. 7, another prior art socket organizer 18 has a base 19 which is provided with a plurality of upright rods  
10 191 for holding a plurality of sockets 1. The upright rods 191 are fitted into the coupling ends 2 of the sockets 1. This prior art socket organizer 18 can bring about a chaotic situation similar to those which are described above with reference to FIGS. 1-4. In addition, the socket organizer 18 can not hold firmly the sockets  
15 1, which are thus vulnerable to loss, as illustrated in FIG. 8.

## SUMMARY OF THE INVENTION

It is therefore the primary objective of the present invention to provide a socket organizer which is free of the  
20 deficiencies of the prior art socket organizers described above.

In keeping with the principle of the present invention, the foregoing objective of the present invention is attained by the socket organizer comprising a base, and a plurality of retaining members. The retaining members are provided with a retaining portion which is so dimensioned to fit into the working end of a  
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socket. In light of the working ends of the sockets being different in specification to one another, only the socket of a specific size and shape can be retained by a specific retaining portion. As a result, a user of the sockets is prevented from arranging the sockets in a disordered manner. In addition, the retaining members are provided with an identification mark of the specification of the working end of a given socket. The identification mark serves to make it easy for the user of the sockets to arrange the sockets in a proper order in the wake of the use of the sockets. In addition, the identification mark serves to enable the user to gain an access to a specific socket with ease and speed. Moreover, the sockets are arranged orderly on the socket organizer such that the coupling ends of all sockets are in a standby position at which the socket can be easily picked up by the socket wrench.

The features and the advantages of the present invention will be more readily understood upon a thoughtful deliberation of the following detailed description of the preferred embodiments of the present invention with reference to the accompanying drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a schematic view of a series of sockets of the socket wrench .

FIG. 2 shows a perspective view of a first prior art socket

organizer to hold the sockets as shown in FIG. 1.

FIG. 3 shows a perspective view of the first prior art socket organizer at work.

5 FIG. 4 shows a perspective view of a second prior art socket organizer to hold the sockets as shown in FIG. 1.

FIG. 5 shows a perspective view of a third prior art socket organizer to hold a series of sockets of the socket wrench.

FIG. 6 shows a perspective view of the third prior art socket organizer at work.

10 FIG. 7 shows a perspective view of a fourth prior art socket organizer to hold a series of sockets of the socket wrench.

FIG. 8 shows a perspective view of the fourth prior art socket organizer at work.

15 FIG. 9 shows a schematic view of a first preferred embodiment of the present invention.

FIG. 10 shows a perspective view of the first preferred embodiment of the present invention at work.

20 FIG. 11 shows another perspective view of the first preferred embodiment of the present invention at work along with a socket wrench.

FIG. 12 shows a schematic view of a second preferred embodiment of the present invention.

FIG. 13 shows a perspective view of the second preferred embodiment of the present invention at work.

25 FIG. 14 shows a schematic view of a third preferred

embodiment of the present invention.

FIG. 15 shows a perspective view of the third preferred embodiment of the present invention at work.

5 FIG. 16 shows a perspective view of a fourth preferred embodiment of the present invention.

FIG. 17 shows a schematic view of the fourth preferred embodiment of the present invention.

10 FIG. 18 shows a perspective view of a fifth preferred embodiment of the present invention.

FIG. 19 shows a schematic view of the fifth preferred embodiment of the present invention at work.

15 FIG. 20 shows a perspective view of a sixth preferred embodiment of the present invention.

FIG. 21 shows a schematic view of the sixth preferred embodiment of the present invention.

20 FIG. 22 shows a perspective view of a seventh preferred embodiment of the present invention.

FIG. 23 shows a schematic view of the seventh preferred embodiment of the present invention at work.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

As shown in FIGS. 9 and 10, an organizer 20 embodied in the present invention is designed to arranged in an orderly way a series of sockets 1 of a socket wrench. The organizer 20

comprises a base 21 and a plurality of retaining members 22. The retaining members 22 are formed of two sliding grooves 221 opposite to each other, a retaining portion 222, and a specification mark 224. The retaining members 22 are mounted at intervals on the base 21 such that the two sliding grooves 221 are fitted with the two sliding projections 211 of the base 21. The retaining portion 222 is provided with a locating ball 223. The organizer 20 of the present invention is characterized by the retaining portion 222 which is so constructed to retain the working end 3 of one of the sockets 1. In another words, the retaining portion 222 is sized and shaped in conformity with the specification of the working end 3 of a given socket 1, as denoted by the specification mark 224. For example, the sockets 1 are provided at a coupling end 2 with a tetragonal slot, and at a working end 3 with a hexagonal slot. The tetragonal slots of the coupling ends 2 of all sockets 1 are identical in specification and are used to couple with the head 33 of a socket wrench 32, as illustrated in FIG. 11. The working end 3 of all sockets 1 is provided with a hexagonal slot engageable with the bolt or nut of a specific size and shape. In another words, the hexagonal slots of the working ends 3 of all sockets 1 are different in specification from one another. As a result, all sockets 1 must be arranged in a predetermined order on the base 21 of the organizer 20 in view of the fact that the retaining portion 222 of a given retaining member 22 fits with the working end 3 of a

specific socket.

In light of the retaining members 22 being removably mounted on the base 21 of the organizer 20, the serial arrangement of the sockets 1 can be changed as desired.

As illustrated in FIG. 11, all sockets 1 can be removed from the organizer 20 by a socket wrench 32 in such a manner that the head 33 of the socket wrench 32 is securely retained in the tetragonal slot 2 of the sockets 1, regardless of the fact that the working ends 3 of the sockets 1 are different in specification.

The retaining portion 222 of the retaining members 22 is of a hexagonal construction, as shown in FIGS. 9, 10, and 11. However, the retaining portion may be of a circular construction, as shown in FIG. 12 in which each retaining member 23 is formed of a circular retaining portion 231, a locating ball 232, and a specification mark 233. The circular retaining portion 231 of a given retaining member 23 has a diameter corresponding to the inner diameter of the hexagonal working slot 3 of a specific socket 1, as illustrated in FIG. 13.

As shown in FIGS. 14 and 15, the retaining member 25 of the organizer of the present invention are of an inverted U-shaped construction and are formed of a head portion 251 and two shoulders 252. The head portion 251 is elastic in nature and is used to retain the working end 3 of the sockets 1. One of the two shoulders 252 is marked with a specification which is corresponding to that of the working end 3 of a specific socket 1.

The elastic head portion 251 is removably inserted into the hexagonal slot of the working end 3 of the specific socket 1, as illustrated in FIG. 15.

As shown in FIGS. 16 and 17, a plurality of retaining members 27 are arranged at intervals on a base 26 which is a plank. The retaining members 27 are of a circular construction and are corresponding in diameter to the hexagonal slots of the working ends 3 of the sockets 1. The retaining members 27 are provided with a locating ball 272. The specification marks 273 are printed on the base 26 such that they are corresponding in location to the retaining members 27.

As shown in FIGS. 18 and 19, a tool organizer of the present invention is designed to arrange in an orderly way a plurality of double-ended wrenches 40, each having at one end a hexagonal working slot 41 of a specification. The tool organizer comprises a base 28 and a plurality of retaining members 29.

The base 28 is a board, which can be fastened onto a wall. The retaining members 29 are fastened onto the base 28 at intervals and are provided with a retaining portion 291, a locating ball 292, and a specification mark 293 which is printed on the base 28. In light of the hexagonal working slots 41 of a series of the double-ended wrenches 40 being various in specification, the retaining portions 291 of the retaining members 29 are different in specification from one another. A given retaining portion 291 is corresponding in specification to only one of the

double-ended wrenches 40. As a result, the wrenches 40 are always arranged in a predetermined order on the base 28 such that the working slot 41 of a specific wrench 40 is retained by a specific retaining portion 291 which is corresponding in specification to the working slot 41 of that specific wrench 40.

As shown in FIGS. 20 and 21, the base 30 and the retaining members 31 of the organizer of the present invention are accommodated in a tool box 50 along with a series of sockets 1 and a socket wrench. The retaining members 31 are provided with a retaining portion 311 and a specification mark 312. The sockets 1 are orderly arranged in the tool box 50, with the working end 3 of a given socket 1 being removably retained by a retaining portion 311 corresponding in specification to the working end 3 of that given socket 1.

As shown in FIGS. 22 and 23, a screwdriver organizer of the present invention comprises a base 60 and a plurality of retaining members 61 mounted on the base 60 at intervals. The base 60 and the retaining members 61 are disposed in a tool box. The retaining members 61 are formed of a retaining portion 611 and a specification mark 612 denoting the specification of the retaining portion 611, with the specification of the retaining portion 611 being corresponding to the specification of one of a series of screwdrivers 70. The screwdrivers 70 have a working end 71 which is used to turn a screw of a specification. The screwdrivers 70 are orderly arranged in the tool box such that

the working end 71 of a given screwdriver 70 is removably retained by a retaining portion 611 which is corresponding in specification to the working end 71 of the given screwdriver 70.

The embodiments of the present invention described above  
5 are to be regarded in all respects as being illustrative and nonrestrictive. Accordingly, the present invention may be embodied in other specific forms without deviating from the spirit thereof. The present invention is therefore to be limited only by the scopes of the following claims.

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